

**Environmental Protection Agency**

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- 70.020.(1) (A) Fresh Water
- 70.020.(1) (A) Water Supply
  - (i) Drinking, culinary, and food processing,
  - (iii) Aquaculture;
- 70.020.(1) (B) Water Recreation
  - (i) Contact recreation.
  - (ii) Secondary recreation;
- 70.020.(1) (C) Growth and propagation of fish, shellfish, other aquatic life, and wildlife
- 70.020.(2) (A) Marine Water
- 70.020.(2) (A) Water Supply
  - (i) Aquaculture.

- 70.020.(2) (B) Water Recreation
  - (i) contact recreation,
  - (ii) secondary recreation;
- 70.020.(2) (C) Growth and propagation of fish, shellfish, other aquatic life, and wildlife;
- 70.020.(2) (D) Harvesting for consumption of raw mollusks or other raw aquatic life.
  - (ii) The following criteria from the matrix in paragraph (b)(1) of this section apply to the use classifications identified in paragraph (d)(12)(i) of this section:

Use classification	Applicable criteria
(1)(A)(i) .....	Column D1—#s 16, 18–21, 23, 26, 27, 29, 30, 32, 37, 38, 42–44, 53, 55, 59–62, 64, 66, 68, 73, 74, 78, 82, 85, 88, 89, 91–93, 96, 98, 102–105, 107–111, 117–126.
(1)(A)(iii) .....	Column D2—#s 14, 16, 18–21, 22, 23, 26, 27, 29, 30, 32, 37, 38, 42–44, 46, 53, 54, 55, 59–62, 64, 66, 68, 73, 74, 78, 82, 85, 88–93, 95, 96, 98, 102–105, 107–111, 115–126.
(1)(B)(i), (1)(B)(ii), (1)(C) .....	Column D2—#s 14, 16, 18–21, 22, 23, 26, 27, 29, 30, 32, 37, 38, 42–44, 46, 53, 54, 55, 59–62, 64, 66, 68, 73, 74, 78, 82, 85, 88–93, 95, 96, 98, 102–105, 107–111, 115–126.
(2)(A)(i), (2)(B)(i), and (2)(B)(ii), (2)(C), (2)(D) .....	Column D2—#s 14, 16, 18–21, 22, 23, 26, 27, 29, 30, 32, 37, 38, 42–44, 46, 53, 54, 55, 59–62, 64, 66, 68, 73, 74, 78, 82, 85, 88–93, 95, 96, 98, 102–105, 107–111, 115–126.

(iii) The human health criteria shall be applied at the State-proposed risk level of  $10^{-5}$ . To determine appropriate value for carcinogens, see footnote c in the criteria matrix in paragraph (b)(1) of this section.

(13) [Reserved]

(14) *Washington, EPA Region 10.* (i) All waters assigned to the following use classifications in the Washington Administrative Code (WAC), Chapter 173-201 (*i.e.*, identified in WAC 173-201-045) are subject to the criteria in paragraph

(d)(14)(ii) of this section, without exception:

173-201-045

- Fish and Shellfish
- Fish
- Water Supply (domestic)
- Recreation

(ii) The following criteria from the matrix in paragraph (b)(1) of this section apply to the use classifications identified in paragraph (d)(14)(i) of this section:

Use classification	Applicable criteria
Fish and Shellfish; Fish .....	These classifications are assigned the criteria in: Column D2—all.
Water Supply (domestic) .....	These classifications are assigned the criteria in: Column D1—all.
Recreation .....	This classification is assigned the criteria in: Column D2—Marine waters and freshwaters not protected for domestic water supply.

(iii) The human health criteria shall be applied at the State proposed risk level of  $10^{-6}$ .

[57 FR 60910, Dec. 22, 1992]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 131.36, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at [www.fdsys.gov](http://www.fdsys.gov).

**§ 131.37 California.**

(a) *Additional criteria.* The following criteria are applicable to waters specified in the Water Quality Control Plan for Salinity for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary, adopted by the California State Water Resources Control Board in State Board Resolution No. 91-34 on May 1, 1991:

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(1) *Estuarine habitat criteria.* (i) *General rule.* (A) Salinity (measured at the surface) shall not exceed 2640 micromhos/centimeter specific conductance at 25 °C (measured as a 14-day moving average) at the Confluence of the Sacramento and San Joaquin Rivers throughout the period each year from February 1 through June 30, and shall not exceed 2640 micromhos/centimeter specific conductance at 25 °C (measured as a 14-day moving average) at the specific locations noted in Table 1 near Roe Island and Chipps Island for the number of days each month in the February 1 to June 30 period computed by reference to the following formula:

$$\text{Number of days required in Month X} = \frac{\text{Total number of days in Month} \times (1 - 1/(1+e^K))}{1}$$

where

$$K = A + (B \times \text{natural logarithm of the previous month's 8-River Index});$$

A and B are determined by reference to Table 1 for the Roe Island and Chipps Island locations;

x is the calendar month in the February 1 to June 30 period;

and e is the base of the natural (or Napierian) logarithm.

Where the number of days computed in this equation in paragraph (a)(1)(i)(A) of this section shall be rounded to the nearest whole number of days. When the previous month's 8-River Index is less than 500,000 acre-feet, the number of days required for the current month shall be zero.

TABLE 1. CONSTANTS APPLICABLE TO EACH OF THE MONTHLY EQUATIONS TO DETERMINE MONTHLY REQUIREMENTS DESCRIBED.

Month X	Chipps Island		Roe Island (if triggered)	
	A	B	A	B
Feb .....	-1	-1	-14.36	+2.068
Mar .....	-105.16	+15.943	-20.79	+2.741
Apr .....	-47.17	+6.441	-28.73	+3.783
May .....	-94.93	+13.662	-54.22	+6.571
June .....	-81.00	+9.961	-92.584	+10.699

<sup>1</sup> Coefficients for A and B are not provided at Chipps Island for February, because the 2640 micromhos/cm specific conductance criteria must be maintained at Chipps Island throughout February under all historical 8-River Index values for January.

(B) The Roe Island criteria apply at the salinity measuring station maintained by the U.S. Bureau of Reclamation at Port Chicago (km 64). The Chipps Island criteria apply at the Mallard Slough Monitoring Site, Station D-10 (RKI RSAC-075) maintained by the California Department of Water Resources. The Confluence criteria apply at the Collinsville Continuous Monitoring Station C-2 (RKI RSAC-081) maintained by the California Department of Water Resources.

(ii) *Exception.* The criteria at Roe Island shall be required for any given month only if the 14-day moving average salinity at Roe Island falls below 2640 micromhos/centimeter specific conductance on any of the last 14 days of the previous month.

(2) *Fish migration criteria—(i) General rule—(A) Sacramento River.* Measured Fish Migration criteria values for the Sacramento River shall be at least the following:

At temperatures less than below 61 °F: SRFMC = 1.35

At temperatures between 61 °F and 72 °F: SRFMC = 6.96-.092 \* Fahrenheit temperature

At temperatures greater than 72 °F: SRFMC = 0.34

where SRFMC is the Sacramento River Fish Migration criteria value. Temperature shall be the water temperature at release of tagged salmon smolts into the Sacramento River at Miller Park.

(B) *San Joaquin River.* Measured Fish Migration criteria values on the San Joaquin River shall be at least the following:

For years in which the SJVIndex is >2.5: SJFMC = (-0.012) + 0.184\*SJVIndex

In other years: SJFMC = 0.205 + 0.0975\*SJVIndex

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where SJFMC is the San Joaquin River Fish Migration criteria value, and SJVIndex is the San Joaquin Valley Index in million acre feet (MAF)

(ii) *Computing fish migration criteria values for Sacramento River.* In order to assess fish migration criteria values for the Sacramento River, tagged fall-run salmon smolts will be released into the Sacramento River at Miller Park and captured at Chipps Island, or alternatively released at Miller Park and Port Chicago and recovered from the ocean fishery, using the methodology described in this paragraph (a)(2)(ii). An alternative methodology for computing fish migration criteria values can be used so long as the revised methodology is calibrated with the methodology described in this paragraph (a)(2)(ii) so as to maintain the validity of the relative index values. Sufficient releases shall be made each year to provide a statistically reliable verification of compliance with the criteria. These criteria will be considered attained when the sum of the differences between the measured experimental value and the stated criteria value (i.e., measured value minus stated value) for each experimental release conducted over a three year period (the current year and the previous two years) shall be greater than or equal to zero. Fish for release are to be tagged at the hatchery with coded-wire tags, and fin clipped. Approximately 50,000 to 100,000 fish of smolt size (size greater than 75 mm) are released for each survival index estimate, depending on expected mortality. As a control for the ocean recovery survival index, one or two groups per season are released at Benecia or Pt. Chicago. From each upstream release of tagged fish, fish are to be caught over a period of one to two weeks at Chipps Island. Daylight sampling at Chipps Island with a 9.1 by 7.9 m, 3.2 mm cod end, midwater trawl is begun 2 to 3 days after release. When the first fish is caught, full-time trawling 7 days a week should begin. Each day's trawling consists of ten 20 minute tows generally made against the current, and distributed equally across the channel.

(A) The Chipps Island smolt survival index is calculated as:

$$SSI=R+MT(0.007692)$$

where

R=number of recaptures of tagged fish

M=number of marked (tagged) fish released

T=proportion of time sampled vs total time tagged fish were passing the site (i.e. time between first and last tagged fish recovery)

Where the value 0.007692 is the proportion of the channel width fished by the trawl, and is calculated as trawl width/channel width.

(B) Recoveries of tagged fish from the ocean salmon fishery two to four years after release are also used to calculate a survival index for each release. Smolt survival indices from ocean recoveries are calculated as:

$$OSI=R_1/M_1+R_2/M_2$$

where

R<sub>1</sub>=number of tagged adults recovered from the upstream release

M<sub>1</sub>=number released upstream

R<sub>2</sub>=number of tagged adults recovered from the Port Chicago release

M<sub>2</sub>=number released at Port Chicago

(1) The number of tagged adults recovered from the ocean fishery is provided by the Pacific States Marine Fisheries Commission, which maintains a port sampling program.

(2) [Reserved]

(iii) *Computing fish migration criteria values for San Joaquin River.* In order to assess annual fish migration criteria values for the San Joaquin River, tagged salmon smolts will be released into the San Joaquin River at Mossdale and captured at Chipps Island, or alternatively released at Mossdale and Port Chicago and recovered from the ocean fishery, using the methodology described in paragraph (a)(2)(iii). An alternative methodology for computing fish migration criteria values can be used so long as the revised methodology is calibrated with the methodology described below so as to maintain the validity of the relative index values. Sufficient releases shall be made each year to provide a statistically reliable estimate of the SJFMC for the year. These criteria will be considered attained when the sum of the differences between the measured experimental value and the stated criteria value (i.e., measured value minus

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stated value) for each experimental release conducted over a three year period (the current year and the previous two years) shall be greater than or equal to zero.

(A) Fish for release are to be tagged at the hatchery with coded-wire tags, and fin clipped. Approximately 50,000 to 100,000 fish of smolt size (size greater than 75 mm) are released for each survival index estimate, depending on expected mortality. As a control for the ocean recovery survival index, one or two groups per season are released at Benicia or Pt. Chicago. From each upstream release of tagged fish, fish are to be caught over a period of one to two weeks at Chipps Island. Daylight sampling at Chipps Island with a 9.1 by 7.9 m, 3.2 mm cod end, midwater trawl is begun 2 to 3 days after release. When the first fish is caught, full-time trawling 7 days a week should begin. Each day's trawling consists of ten 20 minute tows generally made against the current, and distributed equally across the channel.

(B) The Chipps Island smolt survival index is calculated as:

$$SSI=R+MT(0.007692)$$

where

R=number of recaptures of tagged fish

M=number of marked (tagged) fish released

T=proportion of time sampled vs total time tagged fish were passing the site (i.e. time between first and last tagged fish recovery)

Where the value 0.007692 is the proportion of the channel width fished by the trawl, and is calculated as trawl width/channel width.

(C) Recoveries of tagged fish from the ocean salmon fishery two to four years after release are also used to calculate a survival index for each release. Smolt survival indices from ocean recoveries are calculated as:

$$OSI=R_1/M_1 + R_2/M_2$$

where

R<sub>1</sub>=number of tagged adults recovered from the upstream release

M<sub>1</sub>=number released upstream

R<sub>2</sub>=number of tagged adults recovered from the Port Chicago release

M<sub>2</sub>=number released at Port Chicago

(1) The number of tagged adults recovered from the ocean fishery is provided by the Pacific States Marine Fisheries Commission, which maintains a port sampling program.

(2) [Reserved]

(3) *Suisun marsh criteria.* (i) Water quality conditions sufficient to support a natural gradient in species composition and wildlife habitat characteristic of a brackish marsh throughout all elevations of the tidal marshes bordering Suisun Bay shall be maintained. Water quality conditions shall be maintained so that none of the following occurs: Loss of diversity; conversion of brackish marsh to salt marsh; for animals, decreased population abundance of those species vulnerable to increased mortality and loss of habitat from increased water salinity; or for plants, significant reduction in stature or percent cover from increased water or soil salinity or other water quality parameters.

(ii) [Reserved]

(b) *Revised criteria.* The following criteria are applicable to state waters specified in Table 1-1, at Section (C)(3) ("Striped Bass—Salinity : 3. Prisoners Point—Spawning) of the Water Quality Control Plan for Salinity for the San Francisco Bay—Sacramento/San Joaquin Delta Estuary, adopted by the California State Water Resources Control Board in State Board Resolution No. 91-34 on May 1, 1991:

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Location	Sampling site Nos (I--A/RK1)	Parameter	Description	Index type	San Joaquin Valley Index	Dates	Values
San Joaquin River at Jersey Point, San Andreas Landing, Prisoners Point, Buckley Cove, Rough and Ready Island, Brandt Bridge, Mossdale, and Vernalis.	D15/RSAN018, C4/RSAN032, D29/RSAN038, P8/RSAN056, -/RSAN062, C6/RSAN073, C7/RSAN087, C10/RSAN112	Specific Conductance. @ 25 °C ...	14-day running average of mean daily for the period not more than value shown, in mmhos.	Not Applicable.	>2.5 MAF	April 1 to May 31.	0.44 micro-mhos.
San Joaquin River at Jersey Point, San Andreas Landing and Prisoners Point.	D15/RSAN018, C4/RSAN032, D29/RSAN038	Specific Conductance.	14-day running average of mean daily for the period not more than value shown, in mmhos.	Not Applicable.	≤2.5 MAF	April 1 to May 31.	0.44 micro-mhos.

(c) *Definitions.* Terms used in paragraphs (a) and (b) of this section, shall be defined as follows:

(1) *Water year.* A water year is the twelve calendar months beginning October 1.

(2) *8-River Index.* The flow determinations are made and are published by the California Department of Water Resources in Bulletin 120. The 8-River Index shall be computed as the sum of flows at the following stations:

- (i) Sacramento River at Band Bridge, near Red Bluff;
- (ii) Feather River, total inflow to Oroville Reservoir;
- (iii) Yuba River at Smartville;
- (iv) American River, total inflow to Folsom Reservoir;
- (v) Stanislaus River, total inflow to New Melones Reservoir;
- (vi) Tuolumne River, total inflow to Don Pedro Reservoir;
- (vii) Merced River, total inflow to Exchequer Reservoir; and
- (viii) San Joaquin River, total inflow to Millerton Lake.

(3) *San Joaquin Valley Index.* (i) The San Joaquin Valley Index is computed according to the following formula:

$$I_{sj} = 0.6X + 0.2Y + 0.2Z$$

where

$I_{sj}$  = San Joaquin Valley Index

X = Current year's April-July San Joaquin Valley unimpaired runoff

Y = Current year's October-March San Joaquin Valley unimpaired runoff

Z = Previous year's index in MAF, not to exceed 0.9 MAF

(ii) *Measuring San Joaquin Valley unimpaired runoff.* San Joaquin Valley unimpaired runoff for the current water year is a forecast of the sum of the following locations: Stanislaus River, total flow to New Melones Reservoir; Tuolumne River, total inflow to Don Pedro Reservoir; Merced River, total flow to Exchequer Reservoir; San Joaquin River, total inflow to Millerton Lake.

(4) *Salinity.* Salinity is the total concentration of dissolved ions in water. It shall be measured by specific conductance in accordance with the procedures set forth in 40 CFR 136.3, Table 1B, Parameter 64.

[60 FR 4707, Jan. 24, 1995]